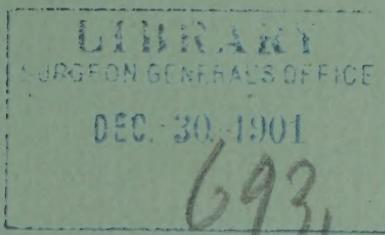


Kelly (H. A.)

THE TREATMENT OF LARGE MYOMATOUS  
TUMORS OF THE UTERUS.—MYOMOTOMY  
AND HYSTEROMYOMECTIONY.

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(READ AT A MEETING OF THE JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY MARCH 2, 1891.).

I have here four large myomatous uterine tumors, my most recent myomotomies and hysteromyomectomies. Each of the specimens is pretty nearly the size of a pregnant uterus in the

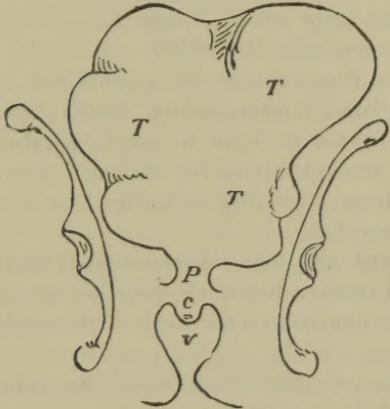


FIG. 1.

Represents a coronal section of the pelvis through the acetabula. *T. T. T.* is a large myomatous uterine tumor filling the lower part of the abdominal cavity, *c* is the cervix uteri, and *v* the vagina. This diagram differs generically from three of the cases under consideration in that the broad ligaments in this are not lifted up out of the pelvis.

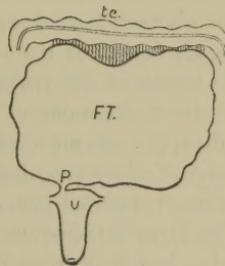
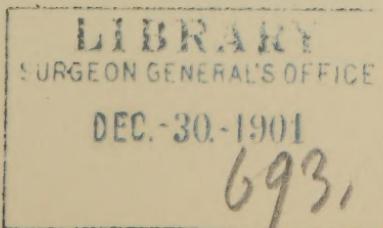


FIG. 2.

Shows the large myomatous mass *FT*, attached at *P* to the fundus of the uterus *U*, and above closely and widely adherent to the transverse colon *tc*, and behind this to the small intestines.

latter months (*v. Fig. 1*); when in the abdominal cavity they closely simulated the protuberant stomach of advanced pregnancy, even to the degree of necessitating some of the women harboring



them to change their gait and find a new equilbrium for the body with the shoulders thrown back.

A complete mimicry of the exaggerated posture and gait of pregnancy is rarely observed in the myomatous uterus because the main masses of such tumors are usually disposed laterally in the abdominal cavity, over the normal centre of gravity of the body, as well as anteriorly, and the change in shape is much less rapid. The deliberate gait, however, is oftenest observed.

#### CASE I.

##### *Large Myoma Uteri.—Myomectomy.—Recovery.*

The first tumor removed was this mass— $25 \times 20 \times 17$  cm.,—taken from a negress sent me by Dr. C. Morris Cheston, of West River, Md. An abdominal incision was made 20 cm. in length, over the most prominent part of the tumor.

The tumor was found attached to the right side of the fundus uteri by a short fleshy pedicle 3 cm. long, containing a few blood vessels, from one to one and a half millimeters in diameter (*v. Fig. 2*).

It was at once clear that the large growing mass was not dependent upon this insufficient source for its vitality.

The query was answered by discovering at the opposite pole of the tumor a fringe of large dilated sinuous omental vessels, from 2 to 3 mm. in diameter and from 3 to 5 cm. in length, parallel to one another and disposed transversely in the abdomen, occupying the whole of the omentum, appearing to spring from the lower border of the transverse colon.

A closer examination showed also that this upper abdominal blood supply was not limited to these colic vessels, but there were a number of close vascular attachments to some loops of the small intestines concealed beneath.

This large myomatous mass was therefore, although not completely detached from its birthplace, of a migratory parasitic nature, drawing very little nutriment from its natural host, the uterus, depending upon an extensive vascular supply developed from an adventitious attachment.

Parasitism of this kind is far from being unusual in pelvic inflammatory growths. I have several times removed inflamed ovaries, which I termed *parasitic* because their vessels in the hilum were withered and small, while a large nutrient vessel or vessels were discovered in some adhesion to the pelvic floor or intestines.

### Operation.

There is a working formula from which I do not often depart in the enucleation of adherent pelvic tumors—that is to sever the natural pedicle last, here, however, the difficulties of manipulation above, in the process of enucleation, were so much greater than below, that I, in this case, first transfixed and tied off the uterine pedicle with silk ligatures, and then proceeded to deal with the omentum and its vessels.

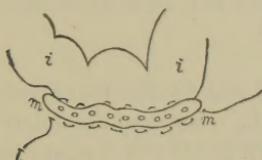


FIG. 3.

Showsthemethodoftreatingsuchaclose flat adhesion to the intestine by sacrificing a strip of the tumor *mm*, and checking hemorrhage and approximating the peritoneal surfaces, by a continuous or an interrupted suture *ll*. *ii* is small intestine.

divided vessels was out of the question, as the peritoneal surfaces would at once have widely separated, exposing an extensive bleeding area on the intestine. To catch and control such scattered bleeding points would have been tedious and full of danger to the integrity of the intestinal wall.

I obviated this difficulty in two ways, at first by making traction on the tumor and drawing down the peritoneum, sliding it over the intestine, thus creating a short pedicle which could be tied satisfactorily. This device failed where the flat adherent surface became broader, and I then resorted to another expedient with success, detaching the adhesions by dissecting off strips of the tumor 4 and 5 cm. in length and 1 cm. in breadth (*v. Fig. 3*).

These strips were slightly cupped out on the under surface, and 2 to 4 mm. in thickness. The free bleeding from the centre of the cut surface of the tumor on the strip at once showed that a large part of the blood stream from these adventitious vessels actually pierced the capsule of the tumor and passed in towards its centre. This observation was verified by artificially injecting some of these vessels, when the fluid was found to flow in at once from the periphery, the vessels breaking up into numerous branches appearing at the very centre of the mass. Other

Some of these larger vessels, on the upper surface, were easily tied off, as there was abundant room between the colon and the tumor, but beneath these was a layer of flat adhesions between tumor and small intestines, as well as to the colon, containing large blood vessels.

Simply to sever these adhesions and afterwards catch the

smaller branches could be distinctly seen ramifying under the peritoneal capsule of the tumor.

The hemorrhage from the strips of tumor thus removed and clinging to the intestinal adhesions was controlled by uniting to one another the parallel edges of the strip of the tumor thus left behind by interrupted silk sutures.

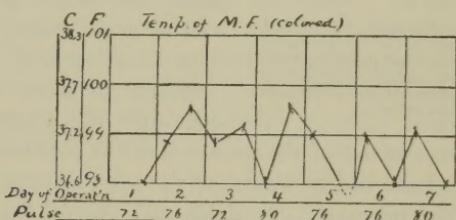
The peritoneal cavity was finally washed out with normal salt solution and the abdomen closed with drainage.

The duration of the operation was 45 minutes to the introduction of the sutures closing the abdominal wound and 60 minutes to completion.

Chloroform was given throughout.

The patient's pulse beforehand was 72, and 82 after the operation.

The subsequent history was uneventful. She had absolutely no fever, the temperature did not reach 100° F. (37.7° C.) at any time.



## CASE II.

*Large Myoma Uteri.—Both Broad Ligaments severed down to Cervix.—Supra-vaginal Hysteromyectomy.*

The second specimen is a large multi-nodular myomatous mass, removed 9 weeks ago in Philadelphia by supra-vaginal hysteromyectomy according to my own method.

She is a patient of Dr. G. G. Faught, of Philadelphia. She bled profusely at the menstrual periods, and in spite of rest, diet, medication and electricity under the constant supervision of Dr. Faught, the tumor continued to grow until it formed a prominent mass, thrusting the thick anterior abdominal wall out almost as far as a pregnancy at term.

The special indications for operation were, vascular disturbances, palpitation and shortness of breath and oppression, serious renal disturbance, in the form of occasional albuminuria, with markedly diminished secretion (240-750 cc. in 24 hrs.), loaded with urates and phosphates, high specific gravity and frequent micturition,

the bladder not holding more than 60 cc. (2 oz.) in marked contrast to its capacity (270 cc.) within a week after operation.

One of the most cogent reasons for operating was also the extreme mental depression caused by the presence of tumor.

#### Operation.

The operation was performed Feb. 4, 1891. Dr. C. P. Noble gave ether, and Dr. Hunter Robb stood opposite to me at the table, with Dr. Farr behind him, handing ligatures, sponges and forceps.

An incision of 20 cm. was made through fat (5 cm.) abdominal walls (*v. Fig. 4*). After lifting out the large tumor,  $19 \times 25 \times 15$  cm., it was found that both broad ligaments were elevated on its sides high out of the pelvis. I clamped the side next to the tumor and applied ligatures next to the pelvic wall, and cut through both broad ligaments obliquely, beneath the tumors to the cervix uteri. This formed the pedicle which was then constricted with a rubber ligature and the mass above cut away (*Fig. 5*), removing tumors, body of the uterus, and the upper part of the cervix (*Fig. 6*).

The circular stump, about 4 cm. in diameter, was then carefully trimmed down to a cup shape, and the cervical canal was well burned out with the Paquelin knife. The upper raw surface of the stump was brought together in a sagittal direction by about eight interrupted stout catgut sutures (*Fig. 7*).

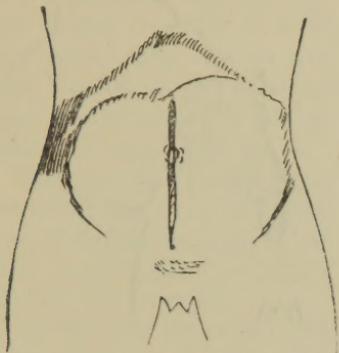


FIG. 4.

Is a generic representation of a large myoma. The long incision through the umbilicus, necessary to lift the tumor out of the abdomen, is seen in the median line.

side next to the tumor and applied ligatures next to the pelvic wall, and cut through both broad ligaments obliquely, beneath the tumors to the cervix uteri. This formed the pedicle which

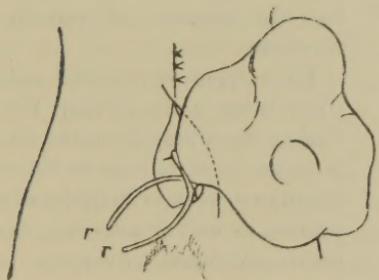


FIG. 5.

Shows the myomatous tumor lifted out of the abdominal cavity. The upper part of the incision has been closed by three sutures to keep back the bowels. *rr* is the rubber ligature encircling the pedicle, which has been formed by cutting down through both broad ligaments beneath the tumor. The dotted line is the line of incision through which the tumor is to be cut away.

At this point I departed from my usual plan in using the catgut, and in not using a continuous silk suture, and further in resting satisfied with a less exact apposition of the opposed surfaces.

The next step was to pass suspensory sutures by entering a curved needle on the peritoneal surface of the stump, near its cut margin, and sweeping through its substance down to the level of the catgut sutures, where the needle was brought out, to reenter at the bottom of the wound on the opposed lip (Fig. 8), through which it was carried, reappearing on the peritoneal surface at the point corresponding to the point of entrance on the other lip.



FIG. 7.

Represents the upper cupped surface of the stump in the act of being obliterated by approximating the right side to the left side, by means of a continuous catgut suture. Instead of the continuous suture, the cases in the text were closed by interrupted sutures.

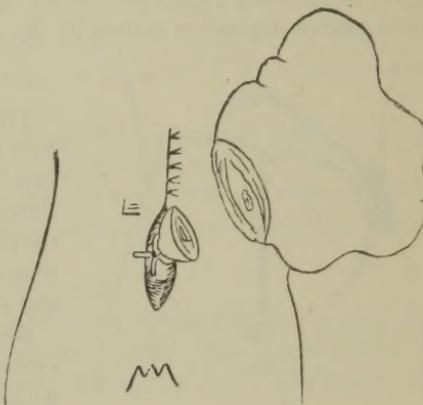


FIG. 6.

Represents the next step in advance of Fig. 5. The tumor has been severed from its pedicle, and is in the act of being removed. The rubber ligature is seen below on the pedicle encircling it like a cravat.

Both of these steps facilitate the operation in diminishing the amount of suturing necessary.

For suspensory sutures I used silver wire, thus further protecting the stump from the late infection so certain to be introduced in a week or more by silk sutures, as well as affording the great additional advantage of being easily removed.

It is impossible, after a couple of weeks, when the wound has contracted, to expose and cut the loops of the silk ligatures at the bottom of the pit, which

must therefore be left to come away of themselves after months have elapsed.

After introducing all the suspensory silver wires (about six) they were then drawn up singly and twisted from left to right five times, taking care as each wire was pulled up to secure good approximation of the opposite peritoneal surfaces.

Both uterine arteries were then tied (*Fig. 9*) on the lateral face of the stump about 2 cm. from its apex, when the elastic ligature was removed.

Shortly after the rubber ligature was relaxed, slight continuous oozing was observed between the lips of the stump, which ceased entirely upon passing two additional sutures through the stump where the blood came through, and then tying them tightly on its free margin.

The abdomen was washed out and the wound closed down to the stump with a drainage tube separated from the stump area by an interval of 2 cm.

The peritoneum of the stump was then united on all sides, by a continuous catgut suture, to the parietal peritoneum, just below the silver wire sutures uniting the lips of the stump (*Fig. 10*); in this way the pedicle was swung both within and without the peritoneum, with the linear margin of the united lips projecting, not through the skin, but just beyond the peritoneum of the lower angle of the wound.

In this way the only avenue by which any hemorrhage could escape, or sepsis discharge, was really extra-peritoneal. I call the method for this reason the combined intra- and extra-peritoneal treatment of the stump.

The visible portions of the silk sutures closing the abdominal wound were saturated with a mixture of iodoform and collodion

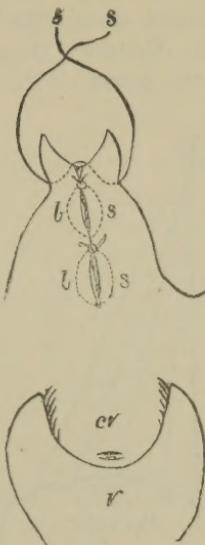


FIG. 8.

Shows the stump in the cervical portion of the uterus in coronal section. *v* is the vagina, *cv* the vaginal cervix and *bs*, *bs* are two tiers of buried interrupted catgut sutures, *ss* is a silver wire suture approximating the uppermost part of the lips and the peritoneal surfaces of the stump. This last is one of the suspensory sutures.

(1-15), and the line of incision sealed with the same. Over this a strip of gauze was laid, on which a mixture of celluloidin in alcohol and ether, with bichloride of mercury (1-20,000), was poured. This glued the gauze down to the skin and hermetically sealed the wound.

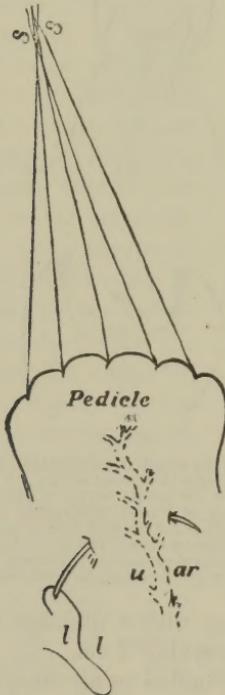


FIG. 9.

Is a sagittal section of the pedicle. The uterine artery is shown projected on the stump in dotted outline, *ss* are silver wire suspensory sutures, one of which is shown in Fig. 8. *ll* is a stout catgut ligature in the act of being carried around the uterine artery for the purpose of ligating it.

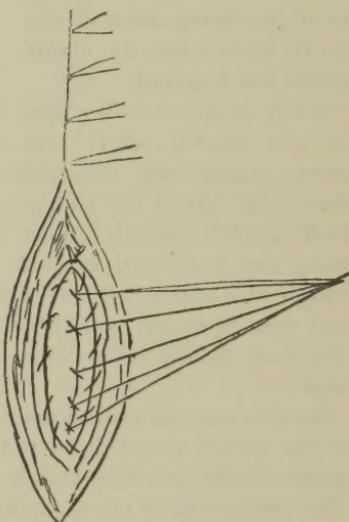


FIG. 10.

Shows the abdominal wound above, closed down to the stump. The short lines crossing the oval outline of the stump are the continuous suture uniting the parietal peritoneum to the peritoneal surface of the stump. The suspensory silver sutures, five in number, are drawn together and to the right.

A loose gauze plug was put in the tube for capillary drainage. The pit at the lower angle of the wound, in which the stump lay buried, was packed with a strip of iodoform gauze, the silver suspensory sutures being brought out in the middle. A little pillow of gauze was laid on the skin parallel to the pit on either

side and the silver sutures hauled well up, decidedly elevating the stump, and caught in the bite of a pair of ordinary long-nosed artery forceps (Fig. 11), laid transversely across the wound, and thus suspending the stump. Sterilized cotton was laid over the whole, and a Scultetus bandage completed the dressing.

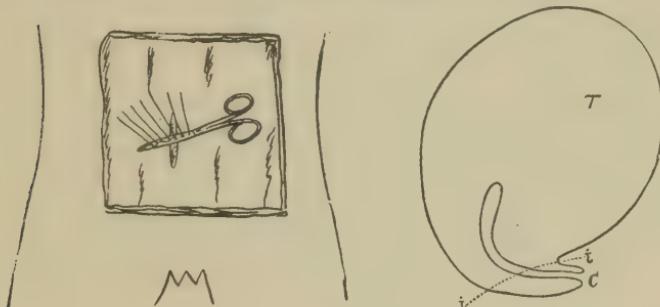


FIG. 11.

Shows the simple method of suspending the stump, to prevent its being dragged back into the abdominal cavity. The silver wires sutures are drawn through a hole in a pad of gauze covering the wound, pulled up taut and simply grasped by a pair of ordinary long-nosed artery forceps laid transversely across the wound.

FIG. 12.

Shows the large myoma *T*, in sagittal section, encroaching on the cervical region *c*; the line of incision in forming the pedicle is shown *ii*.

I am indebted to Dr. R. P. Harris for the following time schedule made while I was operating.

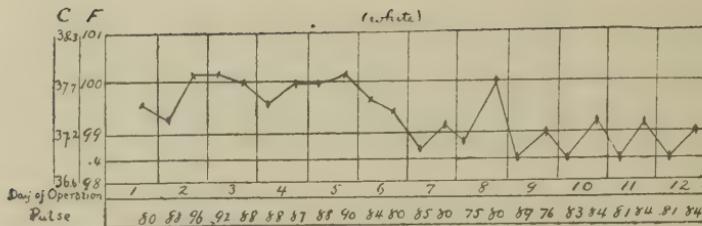
Time—1 h., 17½ min.

h. m.

Operation commenced at.....	1.29
Abdomen fully opened at.....	1.31
Uterine tumor eventrated at.....	1.31½

Time occupied in tying off and cutting through the broad ligaments.

Elastic tubing applied at.....	1.45
Uterus amputated at.....	1.47½
Suturing of cervix begun } 14 min.	1.55
Suturing of cervix ended } 2.09	2.13
Uterine arteries ligated at.....	2.13
Broad ligament vessels tied at.....	2.20
Stump sutured to peritoneum at.....	2.38½
Abdominal wound closed at.....	2.46½
Suturing abdomen, 2.24 to 2.33.....	
Sewing in stump, 2.33 to 2.38½.....	22½ min.
Completing the closure, 2.38½ to 2.46½	



The temperature record is here shown graphically.

The convalescence was free from any complications. The sutures were removed on the ninth day, when there was not a trace of suppuration from the top of the wound to the bottom. The walls of the pit where the stump lay were dry and fresh looking.

### CASE III.

#### *Large Myoma Uteri.—Hysteromyomectomy.—Recovery.*

Three days after performing the operation last described, I removed this large uterine tumor 13 by 18 cm. in diameter, amputating the uterus just above its cervical junction. The patient, brought me by Dr. J. C. Gilland, of Greencastle, Pa., is 46

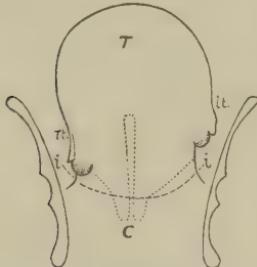


FIG. 13.

Shows the same tumor as Fig. 12, in coronal section.  $T$  the tumor,  $rt$  the right tube,  $lt$  the left tube. Below each tube its corresponding ovary is seen.  $ii$  is the line of incision through the broad ligaments below tubes and ovaries.  $c$  is the vaginal cervix.

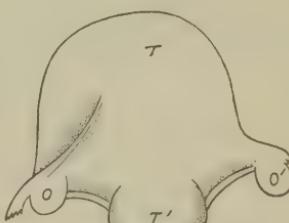


FIG. 14.

Tumor  $T$  occupying body of uterus, more to the right and posteriorly.  $O$  right ovary with long Fallopian tube above,  $O'$  left ovary.  $T'$  large spherical mass which lay behind the symphysis and pressed on bladder. The parallel lines between the ovaries and the smaller tumor shows where the broad ligaments are cut through.

years of age, single. For four years past she had suffered from a profuse menstrual flow and at intervals extensive hemorrhages, lasting for several weeks at a time, making her quite anaemic.

One of these hemorrhages lasted as long as ten weeks. Urination was very frequent. She first noticed the tumor four years ago. It is therefore growing rapidly.

The operation under chloroform anaesthesia lasted 63 minutes to completion. An incision 20 cm. in length was made through the abdominal walls, and through this the large myomatous uterus was lifted out of the abdomen. The tubes and ovaries were lifted by the tumor high up out of the pelvis, and it was necessary to tie off both broad ligaments to get beneath the tumor to form a pedicle (*v. Fig. 12.*)

The broad ligament veins formed large blood reservoirs. (*Fig. 13.*)

The stump of the tumor was cupped out and treated as in the last case, being finally suspended in the lower angle of the incision by my own method. A drainage tube was inserted 2 cm. above the stump.

The depth of the cavity within the portion of the uterus removed with the tumor was  $3\frac{1}{2}$  cm. The tumor was interstitial, lying concealed in an enormously developed muscular sheath 3 cm. thick. The tissue within was oedematous and so soft that the finger was readily thrust into it. The drainage tube was removed in three days, all the abdominal sutures in a week, and the union found perfect throughout. The gauze which had been packed in around the stump was also removed for the first time in a week. The wound was perfectly sweet and clean. The patient recovered rapidly, without a single drawback.

*Note.*—The silver sutures used to suspend the stump were clearly a very great improvement upon the silk sutures, materially diminishing the discharge.

#### CASE IV.

##### *Large Myoma Uteri.—Hysteromyectomy.—Recovery.*

On the 25th of February I again operated for a large myomatous uterine tumor. The patient was an elderly colored woman who was unable to work, inconvenienced by the size of the tumor, as well as by hemorrhages, and pressure on the bladder. The duration of the operation under the ether anaesthesia was 68 minutes. The operation was performed by my own method in a manner similar to the two previous operations just described. An incision 17 cm. in length was made through moderately thick abdominal walls,

and the tumor exposed, lifted out and laid on layers of gauze. There was but one adhesion to the fundus of the bladder, which was 4 cm. long by 1 cm. in breadth, which was tied off. Both broad ligaments were cut through, after tying them with stout silk ligatures on the pelvic side, and clamping on the uterine side with artery forceps. A provisional rubber ligature was then thrown around the pedicle at the lower part of the uterus, and the tumor cut away, cupping out the upper surface of the stump as before.

The whole body of the uterus was thus removed, the incision passing through the cervical junction (Fig. 14). After burning out the cervical canal with Paquelin's cautery, the cupped surface

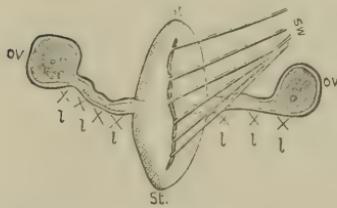


FIG. 15.

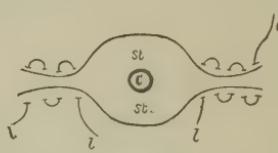
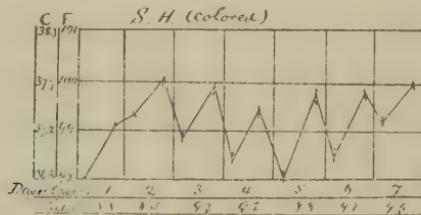


FIG. 16.

Appearance of stump after ligation of broad ligaments by ligatures *l*, *l*, *l*, *Ov*, *Ov*, the outer pelvic extremity of the broad ligaments containing the ovarian vessels. *St*, *st*, the stump closed by silver wires *sw*.

The stump from above *st*, *st*, *c* the cervical canal, *ll* continuous sutures used to draw together the exposed fleshly surfaces on top of the broad ligaments on the sides of the stump.

of the stump was united, right half to left half, by six buried catgut sutures (Fig. 15). The same number of suspensory silver sutures were used to bring the peritoneal surfaces of the stump into apposition, fine approximation between the silver sutures being secured by catgut sutures. The stump thus closed was suspended as previously described in the lower angle of the incision, without any constriction by rubber tube or wire clamp.



A drainage tube was inserted 6 cm. above the stump and the abdominal incision closed. This patient has recovered without a single drawback, or a drop of suppuration.

These three cases just described are typical examples of the success attained by my method of treating the stump of the myomatous uterus after amputation, first described with numerous cuts in the *American Journal of Obstetrics*, April 1, 1888. My operations since that time number about 16; only one of these cases has died. This patient had extensive calcific changes in the heart muscle, and advanced nephritis; the disease was recognized, but its extent was not suspected before the autopsy.

I do not think that any other method in present use can compare with this one for safety, and above all for the exceedingly satisfactory convalescence, doing away with the delay, the danger, and the numerous annoyances of the constricted sloughing stump of the usual method.

The intra-peritoneal treatment is the ideal method, but I think it will be a long time before we will arrive at any safe plan for treating many of these big fleshy stumps in this way.









